The Sea Trout Year, 1982

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Summary

The large juvenile trout exodus from fresh water to the sea which occurred in 1981 was not repeated in 1982. Climatic indicators suggest alternately good and poor years in the output of juvenile fish with a reduced recruitment to the fishery in the immediate future. The mean smolt age is likely to rise and the consequences of this will most likely be a reasonable post-smolt (or finnock) run and a diminution in the contribution of larger sea trout to the catch.

Added to the poor run of exploitable fish in 1982, the angling season was curtailed by very dry weather which reduced effective fishing effort. In spite of this, yield per rod licence was almost identical to that in the previous year. However figures for the fishery districts suggest that fewer sea trout were captured. Draft net catches were up on those of 1981 by 68%. This had been anticipated in Fisheries Leaflet number 116 which suggested that trout from the larger juvenile exodus of 1981 would become exploited as one sea winter fish by this method: the recorded increase in the catch was almost certainly promoted by dry summer weather which confined sea trout to the estuaries. Both draft and drift net sea trout catches constituted a higher proportion of the salmon net catch in 1982 than in 1981. The latter showed a marked reduction on the previous year but this evaluation of the data does not include returns from the Western and particularly the Northern fisheries regions where the salmon catch was said to be high.

EXPLOITATION OF SEA TROUT IN 1982

As in the past two years a number of indicators to the sea trout catch are examined and reviewed. An effort is made to obtain consistency and agreement among the various data which should not be interpreted as absolute figures of yield.

Fishery District Figures

The estimates of total catch were requested on a fishery district basis at the end of the 1982 season from the Inspectors of the Regional Fisheries Boards and such information as has been received is given in Table 1. As is generally the case statistics are not available from every fishery district. In keeping with previous years the figures should be interpreted as a single observer's estimate of the numbers of fish captured in the area with which he has greatest familiarity. Although the returns should be regarded as indications of catch rather than accurate totals they should be comparable with similar data collected in the two previous years. Overall the trend in Table 1 is a decline of approximately one quarter over the previous year and this is a further reduction on the yield by sea trout fisheries in 1980.

Rod and Line Returns

A total of 817 returns from salmon angling licences for the 1982 season were examined on 19 February 1983. The results are summarised per district in Table 2.

In several respects there would appear to be little variation from the previous year. Judged on the national totals (rather than the sum of the district totals) the amount of effort devoted to sea trout angling was almost identical to the figure recorded in the previous year, approximately one third of all licensed rod days. There was an increase in the average weight of individual sea trout captured, the reverse of what happened the previous year and a response to reduced post-smolt numbers in 1982. There was a further reduction in the catch weight per rod day in 1982. However the yield per licence in 1982, at 5.20 lbs, was almost identical to the position in 1981 when 5.19 lbs was recorded.

TABLE 1 Numbers of Sea Trout caught as reported on a Fishery District basis.

Fishery District	1981	1982	% change
Dublin	4,274	2,763	- 35.4
Wexford	1,634		
Waterford		168	
Lismore	833	124	- 85.1
Cork	8,313		
Kerry	1,300		
Limerick	262	1,003	+282.8
Galway		210	
Connemara	10,910	7,248	- 33.6
Ballinakill	1,866		
Bangor	2,819	1,897	- 32.7
Ballina	300		
Sligo	123		
Ballyshannon	3,244		
Letterkenny			
Dundalk	400		
Drogheda	340	1,668	+390.6
Totals for Districts reported on both years	19,438	14,703	- 24.4

TABLE 2 Details of licensed rod fishing effort and sea trout catch in 1981 and 1982 from 930 licence returns from 1981 and 817 from the 1982 season.

District	Ratio of Sea Trout fishing days to salmon fishing days		Mean weight (lb) of individual sea trout caught		Average weight (lb) of sea trout caught per rod day	
	1981	1982	1981	1982	1981	1982
Dublin	0.16	0.39	1.83	1.22	0.15	0.43
Wexford	0.76	0.63	0.84	0.85	0.56	0.51
Waterford	0.07	0.09	0.63	0.95	0.42	0.53
Lismore	0.19	0.16	1.04	1.15	0.67	1.56
Cork	0.67	0.54	0.84	0.73	0.65	0.62
Kerry	0.66	0.83	1.37	1.24	1.14	1.06
(Currane)			(1.57)	(1.52)	(1.30)	(1.45)
Limerick	0.24	0.40	0.91	0.87	0.57	0.43
Galway	0.35	0.41	1.38	0.70	1.36	0.17
Connemara	4.46	2.65	0.99	1.12	1.99	1.86
Ballinakill	3.10	0.56	1.04	0.83	1.38	1.22
Bangor	1.21	0.78	0.86	1.17	1.24	1.13
Ballina	0.01	0.06	1.03	1.50	0.97	1.73
Sligo	0.23	0.53	1.27	1.26	0.71	0.39
Ballyshannon	0.63	0.22	1.17	1.29	0.96	1.00
Letterkenny	0.95	1.02	0.81	1.17	0.71	0.91
Dundalk	0.81	2.67	1.01	0.55	0.56	0.40
Drogheda	0.37	0.79	1.23	1.23	0.45	0.30
Averages from District means	0.87	0.75	1.07	1.05	0.85	0.84
Averages from National totals	0.43	0.45	0.95	1.07	0.93	0.82

Draft and Drift Net Licence Returns

Details abstracted from drift and draft net licence returns are summarised in Table 3. All fisheries regions except the Northern and the Western contributed to the figures.

TABLE 3 Details of the Salmon and Sea Trout Catch from Drift and Draft Net Returns in 1982.

	Drift		Draft	
	1981	1982	1981	1982
Weight of salmon per licence (lb)	1015	566	567	362
Number of salmon per licence	177	83	76	54
Mean weight individual salmon	6.91	6.78	7.42	6.74
Weight of sea trout per licence (lb)	5.5	5.3	23.9	40.1
Number of sea trout per licence	2.0	1.6	13	26
Mean weight individual sea trout	2.72	3.36	1.80	1.55
Sea trout as % weight of salmon	0.54	0.94	4.20	11.10
Number of licences returned	230	138	185	222

The drift net returns are more satisfactory than in the previous year when the reported average weight of fish taken was below the expected meshing size. In 1982 the average weights were more realistic. As a percentage of salmon, sea trout in the catch increased from the previous year, possibly indicating a reduction in the capture of the larger species. In terms of sea trout captured per licence, numbers were down on the previous year.

The draft net catch of sea trout had been low in 1981 due to, as then reported (Fishery Leaflet number 116), the fact that one sea winter fish are thought to comprise a large proportion of these takings and the large smolt exodus of 1981 would probably appear in the catches the following year. Another contributory factor is likely to have been the dry summer months of 1982 which possibly confined sea trout to estuaries where they were more vulnerable to draft netting. Whatever the explanation, there was a rise in the amount of sea trout taken by draft net in

1982 and as a percentage of salmon (by weight) the sea trout yield by this fishery also increased.

Specimen Sea Trout

Numbers of large sea trout accepted by the Specimen Fish Committee in 1982 were the same as in 1981. Fig. 1, which has been adjusted for late returns of fish taken in 1980, displays a clear peak in numbers of these fish corresponding with the heavy migrations of juvenile trout to sea in the latter years of the 1970s. It is expected that numbers of specimen sea trout will decline in the next few years.

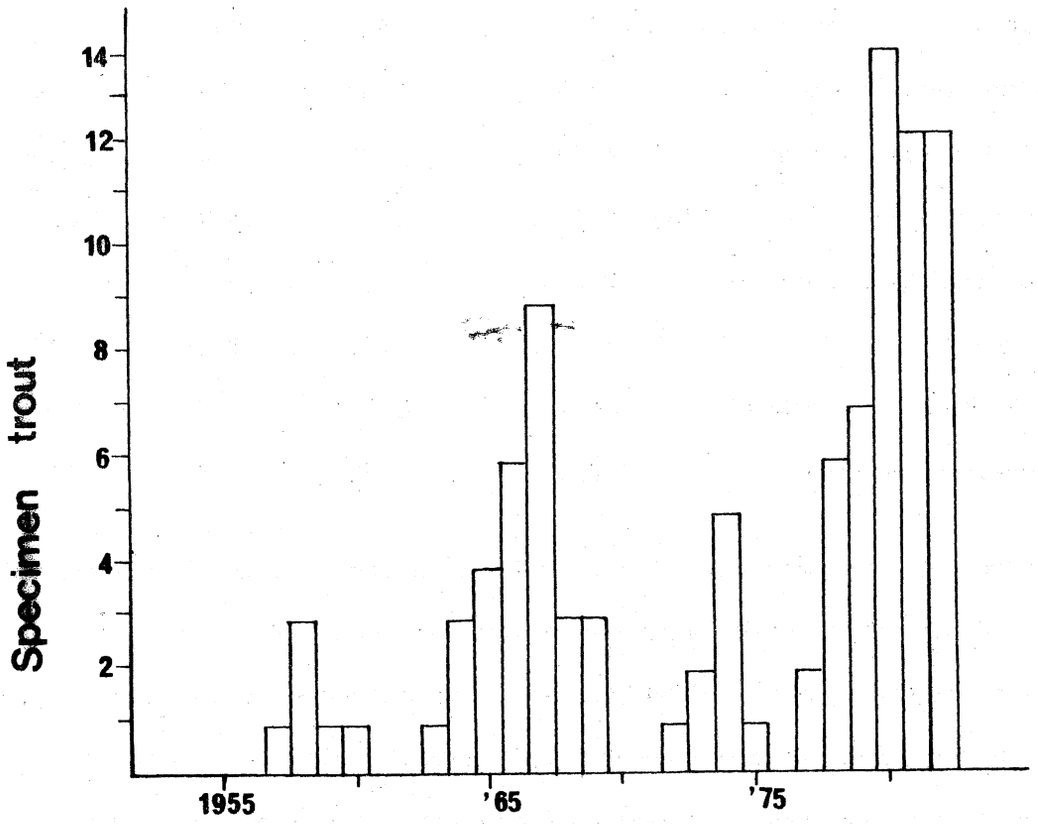

Fig. 1 Numbers of specimen sea trout recorded annually from 1955 to 1982. The numbers in 1980 have been readjusted from those reported in leaflet number 116 to take account of late records.

Estimates of the National Catch

Three years' data from fishing seasons which were evaluated on a comparable basis are now available. However, the total licence sales figure for 1982 is not yet to hand and, as in previous years, a national estimate on that basis must await the finalisation of those figures. For the two previous years the catch estimate is as follows:

Year	Rod Catch	Draft Net Catch	Drift Net Catch	Totals
		kg		
1980	51102	8000	211	59313
1981	39691	8015	2190	49896

SEA TROUT STOCKS IN 1982

Climatic Conditions

According to the criteria on which the environment for sea trout development is evaluated (the number of days annually on which the dry bulb temperature reaches or exceeds 5.6 C at the Shannon synoptic weather station) 1982 was a poor year. At 233 days it had the shortest growing period since collection of these data relevant to sea trout studies commenced. A derived statistic, of greater application in this work is the accumulated three year total of growing days. This, as can be seen in Fig. 2 is tending downwards.

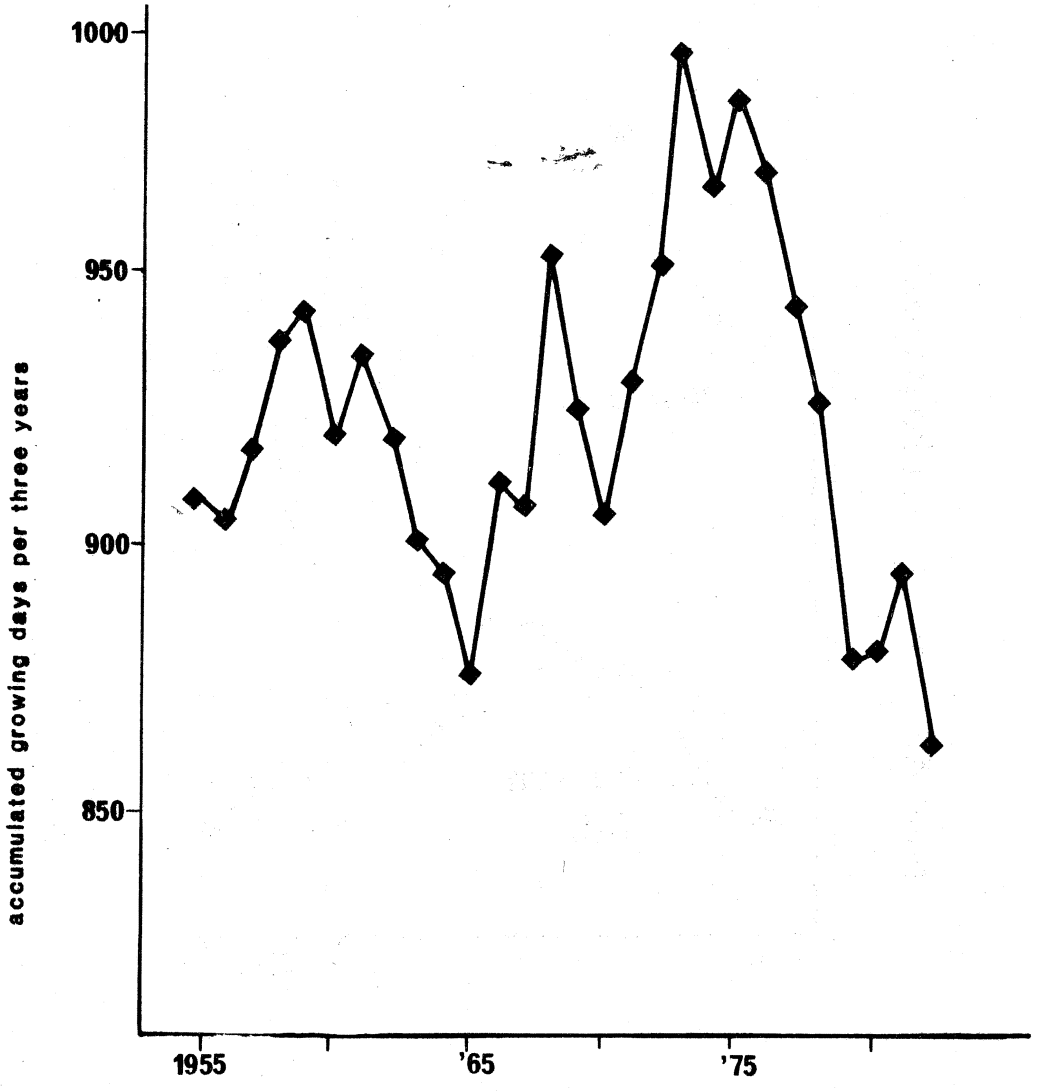

Fig. 2 The three year accumulated growing season indicator prepared from data collected at the Shannon synoptic meteorological station.

It has previously been shown that when the accumulated three year growing day totals are high over a period the juvenile trout exodus is also consistently high. Once the accumulated totals begin to decline due to the intervention of a colder than usual year, migrations to sea begin to fluctuate considerably and their overall trend is also downwards. The accumulated three year totals from 1973 to 1976 varied between 966 and 991 days. In 1982 the statistic had fallen to 863, a reduction of some 3 - 4 months' growing time.

Migrations at Burrishoole, Co. Mayo

As in previous reports data from the above fishery were very kindly provided by Dr. Tom Cross of the Salmon Research Trust of Ireland. A graphical summary of all such data from 1970 is presented in Fig. 3. The total exodus of juvenile trout in 1982 was smaller than in the previous year and a distinctive alternately good and poor sequence of juvenile output is now established.

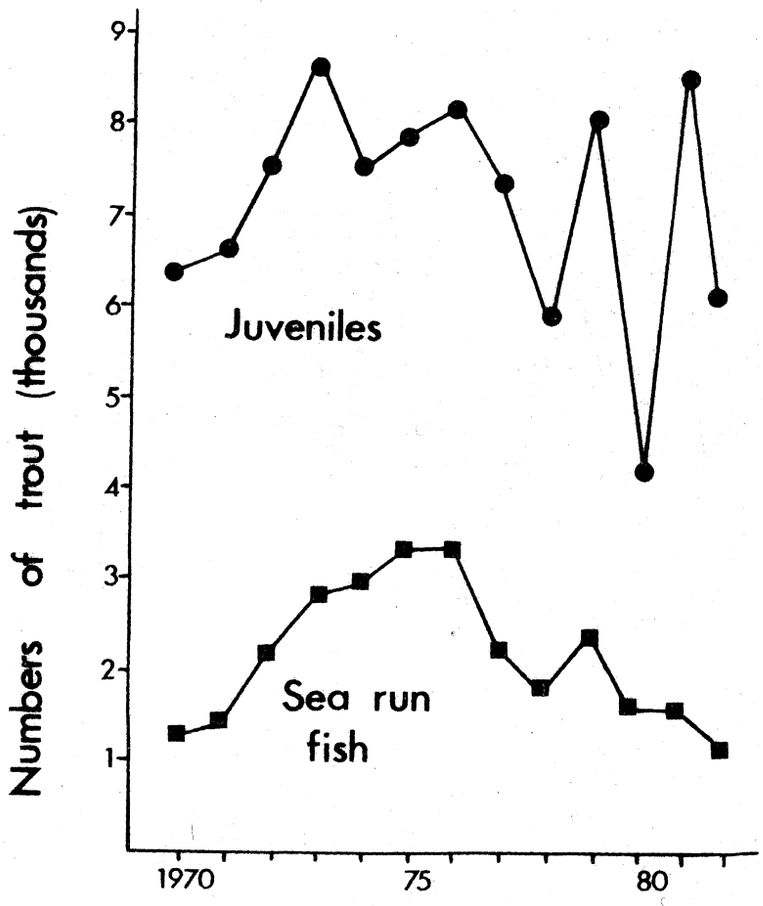

Fig. 3 Trout migrations at Burrishoole from 1970 to 1982 inclusive.

The Waterville Stock at Currane

In 1982 as in the previous years the summer sea trout fishery at Currane was sampled; on this occasion by Mr. Joseph Breen of the Department of Zoology, Queen's University, Belfast. At least 60% of the anglers' catch was sampled in July and August but the total numbers of fish examined were small, 123 trout of which 15 were premigratory or "resident" brown trout. The average weight of the sea trout only was up on the previous year but lower than in 1980:

Year	Mean Weight g	Number Examined
1980	725	215
1981	386	191
1982	579	104

An increase in average weight would suggest that post-smolt were of less importance in 1982 than the previous year and this interpretation is supported by a breakdown of the sea age composition of the trout (Fig. 4). This phenomenon has been confirmed in the Burrishoole migrations, and in the average weights from the rod and line licence returns.

Recruitment to the Currane stock, though less plentiful than in 1981 was better than in 1980.

Census work undertaken in the Waterville fishery will be written up at greater length when data have been assembled over a number of years. One of the objectives of the work is to elucidate the complex relationship between climate and production of trout. Much is known about this already but details of the mechanism remain to be clarified. For example it would appear that the consequences for a trout population of a cold spring - like that of 1979 - are somewhat delayed. The mean smolt age of first migrants in 1980 was 2.13 years, which is comparable to the situation prevailing in the mid 1970s when climatic conditions favoured a heavy exodus of juvenile fish. In 1981 the mean smolt age rose to 2.32 years and in 1982 it was 2.46 years. The incidence of B type smolts (migrants which made freshwater growth in their first descent to sea) among two year smolts rose from 58% in 1980 to 69% the following year. By 1982 it had again fallen back to 50%. A formula incorporating both the

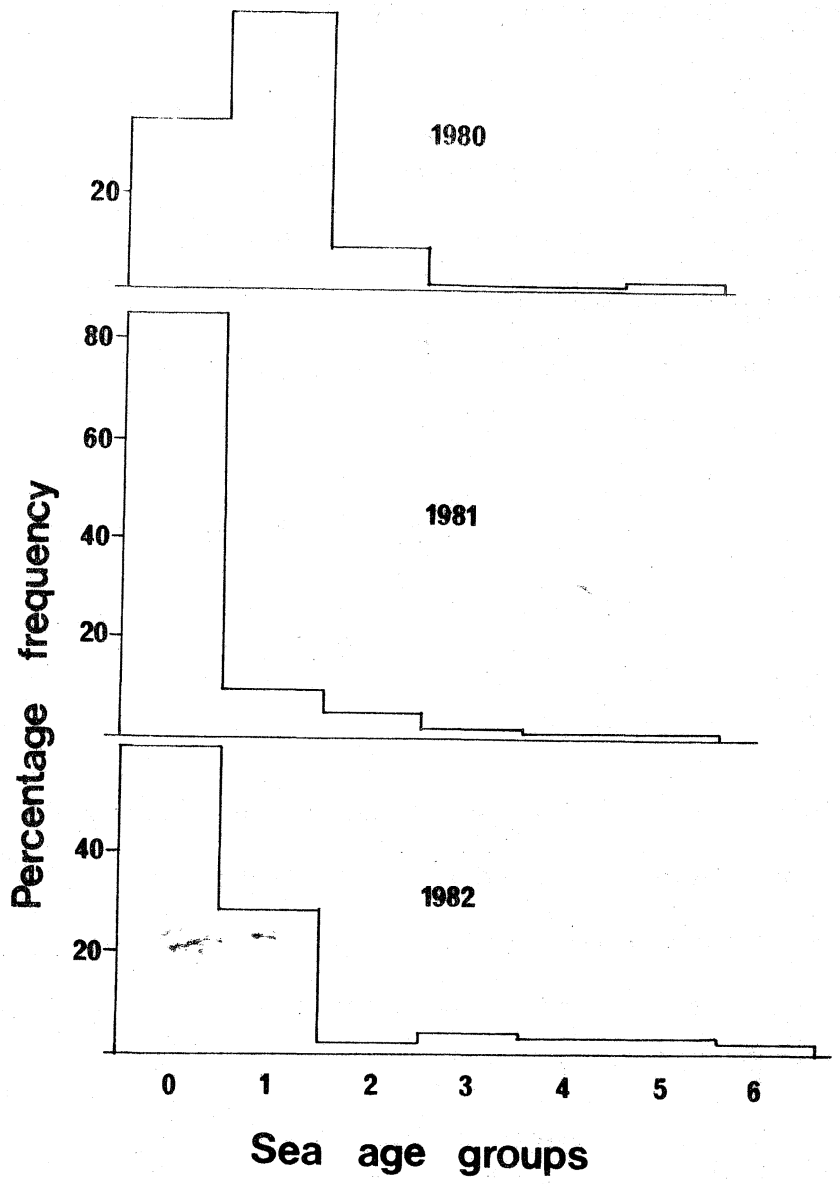

Fig. 4 Sea age composition of the Waterville anglers' catch from 1980 - 1982 inclusive.

incidence and amount of B type growth is necessary when describing the mean smolt age. As things stand it would appear that, although the mean smolt age statistic was highest in 1982, another interpretation of it taking B type growth into account, might well identify 1981 as having the highest values.

REPORTS AND PUBLICATIONS RECENTLY AVAILABLE

The Sea Trout Year 1981 Fishery Leaflet No. 116: 11pp
The predecessor to this report; contains similar information and is the second in the series of annual reports on sea trout stocks and fisheries.

Tail of a Trout Trout and Salmon No. 325 July 1982: 61 - 62.
Gives an account of some of the meristic investigations on Waterville sea trout.

Fluctuations in the incidence of large trout in Ireland
Salmon and Trout Magazine Autumn 1982: 42 - 48.
Reviews the incidence of large sea trout and postulates a climatic regulator of their production.

Sea trout and their fisheries from the Dublin fishery district
Fisheries Bulletin (Dublin) No. 2 (1981): 15pp
Brings together information on the freshwater production, marine biological characteristics and fisheries for sea trout within the Dublin Fishery District.

The Beltra fishery, Co. Mayo and its sea trout Salmo trutta stocks. Fisheries Bulletin (Dublin) No. 4 (1981): 16pp
Evaluates the exploited stock from scale materials and life data collected in the mid 1970s. The report also examines information on the rod fishery.